BELMONT MILL, POWERHOUSE
(Nevada Belmont Mill)
Humboldt-Toiyabe National Forest
Approximately 7 miles south of U.S. Route 50 on USDA Forest Service Road No. 623
Ely vicinity
White Pine County
Nevada

HAER NV-46-B
HAER NV-46-B

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

BELMONT MILL,
POWER HOUSE

HAER No. NV-46-B

Location: Approximately 7 miles south of U.S. Route 50 on USDA Forest Service Road No. 623, Ely vicinity, White Pine County, Nevada.
U.S. Geological Survey, Seligman Canyon, Nevada, 7.5 Quadrangle (1992), Township 16 North, Range 57 East, Section 1.
UTM Zone 11, Easting 2060837.60, Northing 14266929.17 (southeast corner of building) (NAD 83).
Humboldt-Toiyabe National Forest Feature No. F15.

Present Owner/Occupant: United States Department of Agriculture (USDA) Forest Service, Humboldt-Toiyabe National Forest.

Present Use: Abandoned.

Significance: The Tonopah Belmont Development Company (TBDC) was one of the most important companies created during Nevada's early twentieth-century mining boom. As ore deposits in its central Nevada mines were depleted, the company sought new claims to resurrect its fortunes. In 1926 TBDC built the Belmont Mill near Hamilton to process lead and silver ore from its recently acquired claims in the White Pine mining district of eastern Nevada. The small pilot mill employed the most recent advances in table concentration and flotation mineral processing techniques, and the company erected numerous other buildings and structures, including the power house, to support the mining and milling work. All power for the mill site was generated in the power house, including both electricity and the mechanical system of driveshafts, belts, and pulleys to run the mill machinery. Although largely abandoned by TBDC after a few years, later owners used the mill and the power house for smaller operations. Today, although most of the equipment has been removed, the Belmont Mill site is one of the only intact early twentieth-century mill complexes in eastern Nevada. As such, it is a tangible reminder of the decline and failure of a once-powerful company and, thereby, of the boom and bust

cycle so common in the mining industry. The subsequent modification and reuse of the buildings and structures for small-scale operations typifies the ceaseless hum of optimism that sustains the mining industry.

Historian: Anne Oliver, Principal, Oliver Conservation Group. Fieldwork for the project was conducted in the fall of 2010. Project documentation was accepted by HABS/HAER in 2011.

Project Information: This project was completed by a team of private contractors at the request of the USDA Forest Service, Humboldt-Toiyabe National Forest (HTNF), in consultation with the Nevada State Historic Preservation Office. When the property came under the purview of the HTNF several years ago, the agency recognized the historic significance of the site and sought to fulfill its obligations under Section 110 of the National Historic Preservation Act by documenting and stabilizing the buildings. The project contract was awarded to ajc architects of Salt Lake City under an indefinite delivery/indefinite quantity contract between Region 4 of the USDA Forest Service and the firm. The project historian was Anne Oliver, a historic preservation consultant with Oliver Conservation Group (Salt Lake City) and sub-contactor to ajc; she was responsible for all aspects of the historical report and would like to thank Eric Stever, Archaeologist, HTNF Ely District, and Peter Fleischmann, Civil Engineer, HTNF, for their assistance. Matt Wallace, Intern Architect with ajc architects, was responsible for the architectural measured drawings and completed all fieldwork and final drawings with the assistance of Oliver Smith Callis, Draftsman. The photography was produced by Steve Tregeagle Photography (Salt Lake City), a subcontractor to ajc, under the direction of Steve Tregeagle and with the assistance of Heath Brown.

PART I. HISTORICAL INFORMATION

A. Physical History

1. Date of construction: 1926. Title records document that, in April and August 1926, TBDC president Clyde A. Heller located the four unpatented mill site claims (Nevada Nos. 3 through 6).[1] Construction was underway by mid-April, formwork for the foundations was in place by mid-May, and the concrete foundations poured by the beginning of June.[2] Newspaper accounts mention only the mill foundations, but the power house was integral to the mill's function and would have been built simultaneously or even before the mill to provide power for construction work. After only four short months of work, the Belmont Mill was given its initial run on Friday, August 20, 1926, making it the first reduction plant to operate in the White Pine mining district since 1892.[3]

2. Architect/Engineer: Tonopah Belmont Development Company. No references were made to the specific architect or engineer responsible for the design of the Belmont Mill buildings, including the power house. However, in 1910-11, TBDC staff had designed and built a 500-ton silver cyanide reduction mill at Tonopah (called the Tonopah Belmont Mill).[4] Detail drawings and construction were supervised by the engineer Otto Wartenweiler, and he may also have been involved with the design of the Belmont Mill buildings, in particular the mill and the powerhouse.[5]

3. Builder, contractor, suppliers: Tonopah Belmont Development Company. The superintendent of construction was initially L. O. Bastian, who became ill and was replaced in mid-May by W. I. Cowsert, "who erected the Belmont Mill at Tonopah."[6] The Tonopah mill was being dismantled at the time, and rails and machinery from that mill were hauled to the new mill site by truck and by a six-horse team. Lumber was hauled from Ely.[7]

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[1] White Pine County Records, Book 96, p. 599-600; Book 102, p. 89.

[2] Ely Daily Times, April 16, May 19 and June 2, 1926.

[3] Ely Daily Times, August 12 and 20, 1926.

[4] Jay A. Carpenter et al., The History of Fifty Years of Mining at Tonopah, 1900-1950 , University of Nevada Bulletin XLVII (1), Geology and Mining Series No. 51 (Reno: Nevada Bureau of Mines, 1953), 50, 62-64. A paper on the construction and operation of the Tonopah mill was presented at the American Institute of Mining Engineers meeting in San Francisco in 1915. See A. H. Jones, "The Tonopah Plant of the Belmont Milling Co.," in Transactions of the American Institute of Mining Engineers, vol. LII (New York: American Institute of Mining Engineers, 1916), 95-122.

[5] Wartenweiler opened an office in the Van Nuys Building in Los Angeles in 1914 and had designed at least two other large mining and milling plants by that time; see Steam Vol. XIII (1) (January 1914), 26. Given his past association with TBDC he may have been involved in the design of the Belmont Mill but there is no direct evidence of this.

[6] Ely Daily Times, May 19, 1926.

[7] Ely Daily Times, March 17 and April 22, 1926. TBDC was simultaneously investing in "Camp Belmont," its new Arizona lead-silver property, including mine development work, well drilling, building construction, telephone line construction, and machinery installation. Some of the machinery was

During the construction period about forty men were employed at the property, some at the mine but many as construction hands. The men were initially housed in Hamilton, about four miles away, but in June some of them moved into the newly erected boardinghouse (NV-46-I), which was the first building completed on the mill site.[8]

4. Original plans: No original plans for the power house were located during the research phase of this project, but TBDC undoubtedly prepared architectural and engineering drawings. The documents might be included in TBDC's corporate records, if these still exist and can be located in the future.

5. Alterations and additions: The only changes to the power house involve the removal of all machinery, including the massive diesel engine. According to oral accounts the machinery was in place in the 1960s and was removed thereafter.[9]

B. Historical Context:

See the Narrative Overview in HAER No. NV-46 for a complete discussion. In summary:

The Belmont Mill and most of its associated buildings and structures were designed and constructed by TBDC in 1926. The mill site is located in the White Pine mining district of east-central Nevada, at the northern end of the White Pine Mountains. The mill itself sits at an elevation of about 7,500 feet near the mouth of McEllen Canyon, which lies between Pogonip Ridge and Mount Hamilton immediately to the west and Babylon Ridge to the east. The once-renowned town of Hamilton lies on the opposite side of Babylon Ridge about four miles to the southeast, just north of Treasure Hill.

The White Pine mining district, about 16 miles square, was organized in 1865 with the discovery of ore on the west slope of Mount Hamilton, but intense development began only after rich silver chloride deposits were discovered on Treasure Hill in 1868.[10] The ensuing rush resulted in the creation of Hamilton and several nearby towns. In 1869-70 there were 197 mining companies and an estimated population of 25,000 people in the district as a whole. The boom ended

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doubtless salvaged from the Tonopah mill as well. See "Tonopah Belmont Opens Mine in Arizona," in Engineering and Mining Journal-Press vol. 121: 22 (May 29, 1926), 896.

[8] Ely Daily Times, June 3, 1926.

[9] Interview with Hal (Rod) Jensen, Jr., 1 October 2010.

[10] The creation of the White Pine district was only part of the general frenzy of activity in White Pine County, which saw the establishment of more than a dozen new mining districts in 1869 and six more in the 1870s. See Steven R. James (ed.), Prehistory, Ethnohistory, and History of Eastern Nevada: A Cultural Resources Summary of the Elko and Ely Districts, Cultural Resource Series No. 3 (Reno: Bureau of Land Management, 1981), 254-55.

abruptly in 1870 and it has been described as "one of the most, intense, and shortest, mining booms in the American West."[11] Hamilton and the adjacent towns were largely depopulated during the course of the 1870s but were not completely abandoned until the 1930s: oral histories document that about 100 people lived in the area in 1917, and there were 56 registered voters residing in Hamilton in 1928.[12]

The White Pine mining district is broken into three distinct sections: a copper belt on the west slope of the White Pine Mountains centering around Monte Cristo, a lead-silver belt on the east side of the range centering around McEllen Canyon, and a silver belt further east centering around Hamilton and Treasure Hill. The lead-silver belt deposits were discovered shortly after the silver deposits at Treasure Hill, and some of the mine claims associated with the Belmont Mill may have been established at that time. Early attempts to smelt the ores were unprofitable due to crude methods and high transportation costs. However, it was reported that, in the 1880s,

> ... when mining had been abandoned on Treasure Hill, attention was again directed to [the lead deposits]. More favorable market conditions made it profitable to export the best grade of these ores to Salt Lake and San Francisco for reduction, and from these mines have since come the ores that have employed, for more than 20 years, the small remaining population of the district.[13]

But generally the district was very quiet. Accounts of the district in Mineral Resources between 1905 and 1924 indicate that lead-silver ores remained the principal product but that typically only 300 to 500 tons of ore were produced each year, most of it of high enough quality to be classified as shipping grade. Exceptions were the years during World War I, when increased demand for lead made it economically viable to treat lower grade ore at concentration mills; about half the ore was milled while the other half was of shipping grade. But the White Pine district would have one last flurry of activity in the mid-1920s, spurred by the investments of TBDC and the construction of the Belmont Mill.

The second great wave of mining in Nevada was ushered in by the discovery of silver ore deposits near Tonopah Springs in 1900, in the central part of the state, and by 1905 the bustling town of Tonopah was established. Two great mining companies arose during this boom, the Tonopah Mining Company and the TBDC. Both were fully industrialized in the modern sense, defined by a highly structured organization, the existence of owners and financial backers in distant urban areas,

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[11] Donald L. Hardesty, "Managing Historic Properties in the White Pine Mining District," (unpublished report prepared for Humboldt National Forest, 1993), 1.

[12] Jen Huntley-Smith, "Documentary Report for Archaeology of Treasure Hill," p. 6, as cited by Hardesty, "Managing Historic Properties in the White Pine Mining District," 4.

[13] W. S. Larsh, "Mining at Hamilton, Nevada," in Mines and Minerals (June 1909), 523.

an elaborate division of labor (wage earners, shift workers, managers, technicians, engineers, financiers), and the construction of large reduction facilities, offices, and residential infrastructure close to the mines.[14]

A group of Philadelphia capitalists arranged to buy the original Tonopah claims in 1901, creating the Tonopah Mining Company and naming Arthur Brock, a wealthy Philadelphia businessman, as president. In May 1902 either Arthur or John Brock arrived to inspect the new holdings and at that time negotiated the purchase of adjacent claims and a tunnel.[15] By December the tunnel property had been combined with several other holdings and was incorporated in New Jersey as the TBDC. "These two companies accounted for 60% of the district's total production ($146,336,102) from 1901 through 1940;" the estimated profits of TBDC alone were $39 million.[16]

TBDC initially shipped ore to the Comstock mills in Virginia City and to California but soon decided to build a 60-stamp mill at Millers, about thirteen miles west of Tonopah.[17] The opening of a rich new vein prompted the construction, between 1910 and 1911, of a new 500-ton cyanide mill in Tonopah itself, adjacent to the shaft.[18]

Clyde Heller was named president of the company at this time, a position he would retain until his death in 1937.[19] The company prospered under his direction between 1911 and 1915, producing 5.66 percent of the silver in the United States and returning profits from the Tonopah mines of $2 to 3 million.

> Similar to all prospering mining companies, President Heller [stated] in his [1914 annual] report "the examination of other mining properties has continued with a view to purchase, and negotiations are being conducted for one." This was the start of

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[14] See Martha H. Bowers and Hans Muessig, History of Central Nevada: An Overview of the Battle Mountain District, Bureau of Land Management Cultural Resources Series No. 4 (Reno: Bureau of Land Management, 1982), 39.

[15] David Fairall, in "The Tonopah Belmont Development Company: Its Beginning and Formation," in Nevada Historical Society Quarterly 40 (Fall 1997), 301-02, states that Arthur Brock visited Tonopah while Loren Chan, in Sagebrush Statesman: Tasker L. Oddie of Nevada (Reno, University of Nevada Press, 1973), 28, states that John Brock visited. Whichever the case, it is clear that the in the early days the two companies had close ties, often with overlapping officers and boards of directors.

[16] Fairall, "The Tonopah Belmont Development Company," 290, and Bowers and Muessig, History of Central Nevada, 35.

[17] Carpenter et al., The History of Fifty Years of Mining at Tonopah, 87.

[18] Ibid., 50, 62-64.

[19] By the 1920s, the TBDC corporate office address was given as 500 Bullitt Building, Philadelphia, with a mine office in Tonopah. It appears that Heller lived in Tonopah. See Walter Harvey Weed, The Mines Handbook, vol. XV (Tuckahoe, NY: The Mines Handbook Co., 1922), 1350.

> many years of search, the taking over of many properties, and an over-all high capital loss.[20]

Heller had of course anticipated the eventual depletion of the company's holdings and indeed, beginning in 1916, the tonnage extracted from the Tonopah mines began a steady decline. High silver prices enabled profits of about $1 million for the next two years but the drop in mine tonnage led to the closing of the mill at Millers in 1918, after eleven years of continuous operation.[21]

Profits in 1918 dropped to below $500,000 and the early1920s were dismal years: the Tonopah mill was closed in 1923 due to insufficient ore supply and the TBDC's leases at Tonopah were forfeited.[22] Profits were below $200,000 by 1924, deriving mainly from TBDC's Canadian mines, and the company continued to search for new properties to revive its fortunes. In 1925, TBDC exercised an option on a lead-zinc mine near Hamilton, in the White Pine district of Nevada.[23]

By early 1926, title records confirm that TBDC owned all of the individual claims comprising the Nevada Group in McEllen Canyon. Initial explorations proved promising, and on March 4, 1926, the Ely Daily Times heralded,

> The Tonopah Belmont Development company, will build a small pilot mill at Hamilton this spring, in which to conduct tests on the ore in the property the company is developing on the lead belt, west of Treasure Hill. Clyde A. Heller, president of the company stated that material for the mill will be assembled and construction started just as soon as the snow goes off and condition of the roads will permit trucking.
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> …Previous reports from Charles Mayotte, [mine] superintendent, showed the property to be opening up in a gratifying manner and that there is already developed sufficient ore to justify the construction of a small mill.

Later in the month, P. W. Racey, TBDC's general superintendent for Nevada operations, issued a statement describing the new workings in the mine and noted, "The Belmont mill at Tonopah is being dismantled and considerable amount of the machinery will be shipped to Hamilton and used in the new test mill."[24]

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[20] Carpenter et al., The History of Fifty Years of Mining at Tonopah, 83.

[21] Ibid., 85-86.

[22] Walter Harvey Weed, The Mines Handbook Vol. XVI (Tuckahoe, NY: The Mines Handbook Co., 1925), 1506.

[23] Carpenter et al., The History of Fifty Years of Mining at Tonopah, 87-90.

[24] Ely Daily Times, March 17, 1926.

To facilitate the initial relocation of machinery, future trucking of ore, and winter access to and from the mill site, Racey asked the White Pine County commissioners to construct a seven mile stretch of road "across the flat" to connect the old Hamilton road near the mouth of McEllen Canyon with the Lincoln Highway (U.S. Route 50) to the north, just west of Antelope Summit. The county agreed to the proposal in early May and the road was completed about two months later; it is the same graded dirt road that provides access from the highway today.[25]

Title records document that, in April and August 1926, Clyde Heller located the four unpatented mill site claims (Nevada Nos. 3 through 6).[26] Construction was underway by mid-April under the supervision of L. O. Bastian. Original plans called for a small, 50-ton capacity mill, but one designed to allow for additions "if the company desire to treat custom ores" from nearby mines. "The new mill will comprise rotary grinders, concentrating tables, cyaniding and flotation, and is being designed especially for the treatment of the ores of that district."[27]

Rails and machinery were hauled from Tonopah to the mine site by truck and a six-horse team; lumber was hauled from Ely.[28] At about this time, W. I. Cowsert, "who erected the Belmont Mill at Tonopah," replaced the ailing Bastian as construction supervisor.[29] Work progressed apace and, in early June, TBDC could report that

> the concrete [mill] foundation has been poured and piles of lumber and machinery are decorating the flat at the mill site. A reservoir for water storage [NV-46-S] has been built and several miles of pipe are now on the ground. Timber for the tramway is also on the ground and the survey has been completed from the mill site to the Cornell property.[30]

Foundations for the power house would have been poured at this time and in fact the building might have been erected before the mill in order to provide power for construction work. At this time, about forty men were employed at the property and their prospective new residence, the boardinghouse (NV-46-I), was reported to have "nine bedrooms, a kitchen, lobby, and bath room, and [was] comfortably equipped."[31] The activity in McEllen Canyon created hope for a revival of the

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[25] Ely Daily Times, March 29, May 3, June 2, and August 4, 1926.
[26] White Pine County Records, Book 96, p. 599-600; Book 102, p. 89.
[27] Ely Daily Times, April 16, 1926.
[28] Ely Daily Times, April 22, 1926.
[29] Ely Daily Times, May 19, 1926.
[30] Ely Daily Times, June 2, 1926.
[31] Ely Daily Times, June 3, 1926.

White Pine district in general, and indeed stimulated new work in both the lead and silver belts by area claim and patent holders that summer and fall.[32]

An Ely Daily Times article dated June 19, 1926, provides one of the few descriptions of the type of equipment originally installed in the power house: "A 55 h.p. full Deisel [*sic*] engine will furnish the power to operate the mill." Further valuable information was provided in an article from July:

> Construction of a power plant and concentrating mill has been completed and the 9000-foot aerial bucket tramway is about finished except for stringing the cable, which is on the ground... [Delay] in receiving three miles of three-inch pipe for the water line probably will postpone milling operations until the middle of [August]...
>
> Power for the operation of the mill and other machinery will be supplied by a 55-h.p. Ingersoll-Rand PO oil engine which has been set on its foundation.[33]

After only four short months of work, the Belmont Mill was given its initial run on Friday, August 20, 1926, making it the first reduction plant to operate in the district since 1892.[34] Of course the power house would have been fully functional at this time. President Heller arrived from New York, en route to Tonopah, for the inaugural run and expressed his "entire satisfaction," noting only the need for minor adjustments to the tram (which delayed operations for at least a week) and stating that the company expected to double the capacity of the mill at no distant date.[35] It was noted that the increase from 50 to 100 tons could be effected by "providing for increased power and the possible addition of another rod mill and more tables."[36]

Milling of the lead ore proceeded throughout the fall of 1926 and with such promising results that the mill's capacity was expanded to 100 tons per day. Modifications may have been made to the power house or its machinery at this time to provide the necessary increase in power, but it is not clear what the changes were, if any. In October, Superintendent Racey visited the site from Tonopah, noting that work would be completed by early November and that "the final flow sheets will be partly table work and partly flotation..."[37] In four

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[32] Ely Daily Times, April 16, May 15, and June 2, 1926.
[33] Ely Daily Times, July 14, 1926.
[34] Ely Daily Times, August 12 and 20, 1926.
[35] Ely Daily Times, August 21 and 27, 1926.
[36] The Ely Record, September 17, 1926.
[37] Ely Daily Times, October 6, 1926.

months of operation in 1926, the mill processed 3,588 tons of ore, resulting in a gross yield of $63,697.[38]

Nevertheless, the Belmont Mill was closed as of January 5, 1927, due to unpredictable operations during the cold weather."[39] The TBDC mine and mill were not completely abandoned: although the winter continued severe through February, it was reported that TBDC and two other mining companies were "working small forces and waiting for spring."[40] But a declining lead market and low extraction seems to have halted any immediate resumption of mining and milling. In both 1927 and 1928 work at Belmont was confined to assessment work, development, and maintenance of the main haulage tunnel; there were no reports of mill operation.[41]

In 1929, TBDC "ceased mining on its own account in favor of leases given to miners."[42] The lessees extracted "considerable high-grade lead-silver ore" from the mine in 1929, and for three months, until operations were suspended once again due to the low price of silver and lead, lower grade ore from the mine was processed at the mill.[43] Again in 1930, "first class smelting ore" was produced from the mine.[44] But the onset of the Great Depression in the 1930s brought work almost entirely to a halt. In 1939, following repairs to the aerial tramway and the milling equipment, a combination of TBDC employees and lessees began processing ores from the mine claims once again.[45]

But in September 1940, the failing TBDC finally sold both the mine and the mill site claims to Captain Arthur A. deMelik of Ely. [46] After one year he sold them to Ely resident Byron (or Bryon) F. Snyder.[47] After 1942, Snyder's permanent address was given as Fort Lauderdale, Florida, and it appears he worked the property for only two years before moving there.[48] Three of the few historic photographs located of the mill site date from about this period but unfortunately the power house is not visible in any of them. Poles for electrical lines are visible, however, leading from the vicinity of the power house to the assay office,

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[38] B. Couch and J. Carpenter, Nevada's Metal and Mineral Production (1859-1940, inclusive (Reno: Nevada State Bureau of Mines, 1943).

[39] Ely Daily Times, January 14, 1927.

[40] The Ely Record, March 11, 1927.

[41] V. C. Heikes, "Gold, Silver, Copper, Lead and Zinc in Nevada," in U.S. Bureau of Mines Mineral Resources, 1928 (Part I) (Washington: U.S. Government Printing Office, 1931).

[42] Carpenter et al., The History of Fifty Years of Mining at Tonopah, 90.

[43] V. C. Heikes, "Gold, Silver, Copper, Lead and Zinc in Nevada," in U.S. Bureau of Mines Mineral Resources, 1929 (Part I) (Washington: U.S. Government Printing Office, 1932).

[44] V. C. Heikes, "Gold, Silver, Copper, Lead and Zinc in Nevada," in U.S. Bureau of Mines Mineral Resources, 1930 (Part I) (Washington: U.S. Government Printing Office, 1933).

[45] White Pine County Records, Book 114, p. 474.

[46] White Pine County Records, Book 121, pp. 291, 293, and 310; Book 129, p. 204.

[47] White Pine County Records, Book 121, p. 306-07.

[48] White Pine County Records, Tax Receipts, 1942-48.

supervisor's office, and boardinghouse south of the mill (see Figures 4 and 5 in HAER No. NV-46).

Activity continued in the early 1940s with a pause during mid-decade and a resumption of work in 1949; there is no firm indication that the mill (or power house) was used during this period.[49] Snyder sold the mine and mill site claims to Don A. Jennings of the Belmont Mine and Mill Co. in June 1949 and it appears that activity at the mine continued through 1956, supported by the strong demand for base metals after World War II and through the mid-1950s.[50] The mine was listed in the Minerals Yearbook as being one of the leading producers of lead in the district for 1955 and 1956, and the report stated that the lead ore was shipped to a Utah smelter; it did not mention if the mill was used for processing.[51] However, the secondary system that was installed in the mill, and which remains partially in place today, most likely dates to this period. According to those who knew him, Jennings was not an experienced miner or mill operator but he did attempt to use the mill to process ore.[52] Based on physical evidence it is clear that the machinery and drive system of the power house were used to operate the modified process.

Little activity was reported in the later 1950s, no doubt because of the major depression that had hit Nevada's mineral industry. But Jennings signed a lease and option to purchase agreement in 1959 with Belmont Lead, Inc.[53] The new company worked on rehabilitating the mine, pipelines, and housing and conducted exploratory activities. A total of 232 tons of ore was extracted and some was even shipped before Belmont Lead ceased operation in late 1960.[54] Subsequent records suggest that neither the mine nor the mill or its power house was ever really used again. In Nevada, "continued low prices prohibited operations of many mines… and it was evident that it would be many years before lead-zinc… returned to the scene." This slump in the market, combined with aging infrastructure and lack of substantial investment to repair and maintain it, brought an end to the working days of the Belmont mine and mill.

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[49] "White Pine District – Principal Mines," unpublished district summary [after 1963] (Reno: University of Nevada, Nevada Bureau of Mines and Geology mining district files, Document No. 52900082).

[50] White Pine County Records, Book 145, p. 170-71, and Book 151, p. 165.

[51] L. E. Davis and W. C. Fischer, "The Mineral Industry of Nevada," in US Bureau of Mines Minerals Yearbook Area Reports, 1955, vol. III (Washington: US Government Printing Office, 1958), 715; and L. E. Davis et al., "The Mineral Industry of Nevada," in US Bureau of Mines Minerals Yearbook Area Reports, 1956, vol. III (Washington: US Government Printing Office, 1958), 761.

[52] Interview with Hal (Rod) Jensen, Jr.

[53] The actual lease and option document could not be found, but it was referenced in a notice of non-liability that Jennings filed in May 1959 (White Pine County Records, Book 218, p. 186).

[54] L. E. Davis et al., "Nevada," in US Bureau of Mines Minerals Yearbook Area Reports, 1960, vol III (Washington: US Government Printing Office, 1961), 661; and "White Pine District – Principal Mines," p. 3.

Several past and present Ely residents recall life at the mill site in the 1960s. Rod Jensen worked claims in the area between 1966 and 1969 with his father and often stayed in the boardinghouse (NV-46-I) in the summer, which was overseen by the site's caretaker, Ermyl Dowd, and used by miners working nearby claims. Ron Jordan, an Ely resident who worked for the county road maintenance department in the late 1960s and early 1970s, often stopped at the boardinghouse to visit and use the telephone. As Jordan remembers it, the mill was used fitfully in the late 1960s but little or not at all after 1967. He attributed this to a lack of material to put through the mill, but also recalled that in some years there was insufficient water from the California Mill springs to operate it.[55]

Both Jensen and Jordan stated that a great deal of equipment remained in the mill and the power house in the 1960s. Jensen recalled a 40-horsepower Ingersoll Rand oil engine in the power house (this differs from the 55-horsepower engine described in early newspapers) and associated smaller engines on concrete mounts around the perimeter of the room. A generator had powered the electrical system and there was also a compressor that was used to start the main engine.[56] The residential buildings had no electricity, indicating that by this time, the power house was used only for mill operations or not at all.

Beginning in the 1970s, the ownership history of the claims is complicated, but essentially Phillips Petroleum Co. leased the Belmont claims from Jennings. The claims were simply brought under the corporation's umbrella and then forgotten, and the property was subsequently shuttled between large corporations for about thirty years. The departure of Mrs. Dowd in the late 1970s marked the abandonment of the Belmont Mill site and the beginning of its new status as a mining relic, hunting camp, and tourist attraction. At this time or earlier, some of the remaining pieces of mill and power house machinery described by Jensen and Jordan may have been sold. A color slide and two photographs taken in 1975 and 1980, respectively, document that the power house exterior appeared just as it does today (see Figures 8 and 9 in HAER No. NV-46), although lack of maintenance and continued exposure to harsh weather conditions have taken a toll.

In 1999 and 2002, the claimholder failed to meet annual requirements and all claims were deemed forfeited. In 2007 the Belmont Mill site was relocated but the buildings and surface structures are now considered to be under the purview of the Humboldt-Toiyabe National Forest. Without any type of maintenance since at least 1980, the power house remains in remarkably good condition.

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[55] Interviews with Hal (Rod) Jensen, Jr., and Ronald Jordan, 29 September 2010.
[56] Ibid.

PART II. ARCHITECTURAL INFORMATION

A. General Description:

1. Character: The power house, as an accessory building to the mill, is a good example of industrial mining design from the early twentieth century. It is sited immediately adjacent to the mill, about six feet north, with a tall shed roof covering the open floor plan and providing space for the machinery and mechanical equipment necessary to power the mill. The mix of traditional and modern construction materials – heavy wood framing members and trusses, concrete floor, multi-paned wood windows, corrugated metal siding and roof - date it to the transition period between the more traditional mill buildings of the nineteenth century and modern mill buildings of the later twentieth century.

2. Condition of fabric: Despite the absence of maintenance for at least forty years, the building remains structurally sound. The building envelope is in good condition due to the inherent durability of the primary building materials (heavy timber and galvanized, corrugated metal) and the dry climate. The exceptions are the wood windows, which are in poor condition – the frames and muntins are damaged or missing and all the glazing is gone. On the interior, all of the original machinery has been removed but the main driveshaft with its associated pulleys remains in place.

B. Construction:

1. Overall dimensions: 22' (east-west) x 24' (north-south). The one and one-half story building is rectangular in shape with a small shed-roofed wing on the north side

2. Foundations: Poured concrete.

3. Walls: The wood-framed walls of the power house are of heavy construction. Posts measuring 6" x 8" are used to support roof trusses, which are braced with 4" x 6" diagonal members. Horizontal 2" x 6" boards are used for lateral stability between the posts and also as nailers for the exterior cladding. The exception is the shed-roofed wing that extends to the north, which has 2" x 4" studs.

The west wall of the power house is treated differently because much of it is a retaining wall for the hillside behind it rather than an exposed exterior wall. It is composed of 6" x 8" timber posts that are backed with 2" x 12" horizontal shoring boards to about the first floor height. The upper half story, which is above grade, is constructed with wood framing like the other walls.

All finished exterior walls are clad in galvanized (or tin-plated), corrugated sheet metal. The sheets measure 26-1/2" wide with a 24" exposed width and a 110"

exposed length. The sheets are nailed to the framing about every 30-40" vertically and every 5-1/2 " horizontally. At least one of the sheets has been hand painted in black with the words "Tonopah Belmont Development Co., Hamilton, Nevada." This is not painted on every sheet and it's likely that the marked sheet was the top in a bundle that was shipped to the site; in effect, a shipping label.

4. Exhaust stack: A 7"-diameter metal exhaust pipe runs from the main engine mount through the concrete channels in the floor, connecting with a metal stack on the east side of the building that extends about 18' above grade.

5. Openings

a. Door: One side-hinged man door is present on the south end of the east wall. It is a five-panel wood door measuring 33" wide x 80" high with pegged wood stiles and rails and plywood panels, and it originally had a rim lock, now missing. The doorway is framed with a simple wood casing and board trim, with metal flashing above the door head.

b. Windows: The fenestration comprises six-over-six-light wood windows with an operable bottom sash (two in the south wall, two in the upper part of the west wall, and one pair in the east wall). A single window has an exterior opening measuring 33-1/2" x 54". Lintels are formed by the 2" x 6" boards that were used in the wall framing as nailers for the siding. As with the mill, exterior trim consists of nominal 1" x 4" boards with metal flashing, a canted 2" x 6" sill, and a 1" x 2" board as an apron. The windows were originally painted white.

6. Roof system:

a. Framing: The sloped shed roof over the main part of the power house is framed with three right-angled Howe trusses. Each truss comprises a 6" x 8" bottom chord with 6" x 6" top chords and diagonal web members; iron tie rods are used for the vertical web members. At connections, the members are notched, spliced, and/or bolted rather than fixed with metal gusset plates. The trusses support 2" x 6" purlins that are notched over the top chords of the trusses. The small shed roof over the north wing is framed with a grid of 2" x 4" rafters and purlins.

b. Shape, covering: Most of the power house is covered with a shed roof that slopes downward from west to east; it matches the pitch of the adjacent mill roof. The small wing on the north side of the building is covered with a shed roof that slopes downward from south to north. The roofs are covered with corrugated metal panels identical in dimensions and manufacture to that used for the wall cladding.

c. Eaves: The roofs are finished with wood eaves. Projecting rafter/truss tails are boxed with a plain fascia and soffit on horizontal eaves. Along the diagonal elements of shed roofs, the projecting ends of purlins are finished with a plain 2" x 6" fascia; board lengths of the same dimension are used between the purlins to finish the wall top. All eave elements were originally painted white. The building has no roof drainage system.

C. Description of Interior:

1. Floor plan: The power house is a one-room building with an open floor plan. Access to the room is through the exterior door in the east wall. The main engine was located on a mount in about the center of the room while smaller pieces of machinery were located on the perimeter. The room is open to the half story on the upper west side, where the main driveshaft and pulleys are positioned between the trusses.

2. Flooring: Poured concrete, including a large raised block (measuring 3'-0" north-south and 7'-2" east west) in the center of the room for the main engine. Two smaller, raised concrete machine mounts along the south wall were for an auxiliary engine and a compressor, used to start the main engine; these measure 31-1/2" x 20" (east mount) and 21" x 15-1/2" (west mount). A concrete machine mount toward the north end of the west wall was for a generator for the electrical system; this measures 42" x 24".[57] Concrete-lined channels in the floor were probably for exhaust lines, pumps, or other equipment.

3. Stairs: There are no stairs in the power house but a wood ladder built against the center of the west wall provides access to the driveshaft and pulley system.

4. Wall and ceiling finish: None of the walls or ceilings are finished and the framing system is exposed in all areas.

5. Mechanical equipment and furnishings:

a. Power system: The Ingersoll Rand engine in the center of the room drove a belt and pulley system that moved a large driveshaft located in the half story above the west side of the room. The driveshaft exits the power house, spans the six-foot gap between buildings, and enters the mill at about truss height on Level 6. In turn, numerous smaller shafts, belts, and pulleys in the mill were driven by the main shaft. Two machine mounts along the south wall were for an auxiliary engine and a compressor, used to start the main engine. A concrete machine mount toward the north end of the west wall was for a generator for the electrical system. The pulleys and driveshaft remain but all machinery has been removed.

[57] Interview with Hal (Rod) Jensen, Jr.

b. Lighting and electric: Electricity for all of the buildings on the site was originally generated in the power house and was supplied by knob-and-tube wiring. Porcelain knobs remain in the power house but all of the wiring has been removed and no fixtures remain.

D. Site Layout

The power house was built on the hillside near the base of McEllen Canyon, immediately adjacent to the mill. The hillside location allowed for six stepped mill levels in order to utilize gravity in the processing operations. However, a flat area was created between the powerhouse, the mill, and the tool shed and lumber rack (NV-46-F) to create a compact and efficient yard for machinery maintenance and repair. See NV-46-A for a general discussion of the site layout.

PART III. SOURCES OF INFORMATION

See HAER No. NV-46.